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EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT

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1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/500,082

**Applicant(s)**

KITAMURA ET AL.

**Examiner**

MICHAEL M. BERNSTEYN

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3, 7, 9, 10 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3, 7, 9, 10 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 04/18/2008
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This Office Action follows a response filed on April 28, 2008. Claims 3, 7, 9 and 10 have been amended; claims 1, 2, 4-6, 11, 13-16 and 18-21 have been cancelled; no claims have been added.
2. In view of the amendment(s) and remarks, the rejection of claims 3-7, 11, 13-17 and 19-21 under 35 U.S.C. 112, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs, the rejection of claims 1, 3-6, 9-11, 13-17 and 19 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi et al. (JP 09-324096) in view of Hirata et al. (JP 2001- 316491), and the rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi'096 and Hirata et al. as applied to claims 1, 3-6, 9-11, 13-17 and 19 above and further in view of Nishiguchi et al. (JP 10-060207) have been withdrawn.
3. Applicant's arguments with respect to claims 1, 3-7, 9-11, 13-17 and 19 have been considered but are moot in view of the new ground(s) of rejection.
4. Claims 3, 7, 9, 10 and 17 are pending.

***Claim Rejections - 35 USC § 103***

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
6. Claims 3, 9, 10 and 17 are rejected under 35 U.S.C. § 103(a) as being as being unpatentable over Nishiguchi et al. (JP 09-324096) in view of Hirata et al. (JP 2001- 316491).

With regard to the limitations of claim 3, Nishiguchi discloses a composition comprises a modified PVA resin having anionic groups (preferably carboxyl and/or sulfo groups) preferably in the amount of 2.0-40.0-mol% and a PVA resin having a degree of saponification of 70-99% and a degree of polymerization 200-8,000. The modified PVA resin having carboxylic groups is produced by Michael addition reaction with acrylonitrile or acrylamide and partly or fully hydrolyzing the reaction product, wherein the weight ratio of A/B is from 95:5 to 5:95, which is within the claimed range (abstract). Example 1 discloses a film formed from a composition comprising a mixture of 35 parts of a modified PVA having saponification degree of 96.3%, and 65 parts of a modified PVA having saponification degree of 71.1%. It is noted that the difference in degree of hydrolysis between the first PVA and the second PVA is more than 3%, which is clearly within the claimed range.

This film has mechanical strength, alkali-resistance, hygroscopic and crack resistance and has dissolution rate; it is suitable to encapsulate chemical products (Table 1, page 4, [0038]-[0040]).

Nishiguchi does not disclose that polyvinyl alcohol composition contains 0.1 to 50 parts by weight of trimethylolpropane as plasticizer (C).

With regard to the limitation of claim 1, Hirata discloses a polyvinyl alcohol based film containing a plasticizer such as glycerol, diglycerol, diethylene glycol, triethylene glycol, propylene glycol, **trimethylolpropane**, etc. These may be used singly or in combination of at least two (page 4, [0026]). The amount of the plasticizer to be mixed

is preferably from 1 to 30 parts by weight per 100 parts by weight of the PVA, which is clearly within the claimed range (page 4, [0027]).

Both references are analogous art because they are from the same field of endeavor concerning water-soluble film comprises a polyvinyl alcohol and a plasticizer.

Therefore, all of the above plasticizers are functional equivalents and can be substituted by each other. Thus, Hirata recognizes the equivalency of glycerol, diglycerol or ethylene glycol used by Hishiguchi and trimethylolpropane as a plasticizer for a polyvinyl alcohol resin. In the instant case the substitution of equivalents solvents requires no express motivation, as long as the prior art recognize equivalency, *In re Fount*, 213 USPQ 532 (CCPA 1982); *In re Siebentritt*, 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950), and a person skilled in the art would have found obvious to substitute glycerol, diglycerol or ethylene glycol used by Hishiguchi for trimethylolpropane of Hirata in the adjusted amount based on their recognized equivalency and with the reasonable expectation of success, and thus to arrive at the subject matter of instant claim 1.

With regard to a ratio of storage modulus and a glass temperature instantly claimed in claim 1, the combined teaching of Nishiguchi and Hirata is silent about it. However, in view of substantially identical polyvinyl alcohol composition between Nishiguchi and Hirata and instant claim 1 (exactly the same polymerized monomers, degrees of hydrolysis, the difference in degree of hydrolysis, plasticizer and its amount, substantially identical method of the preparation of the final composition), it is the examiner position that Nishiguchi and Hirata's polyvinyl alcohol composition possesses

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these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. *In re Best* 195 USPQ 430, (CCPA 1977).

With regard to the limitations of claims 9, 10 and 17, Nishiguchi discloses the usage of ethylene glycol, glycerol or diglycelol as plasticizers, and low-molecular weight polyethylene glycol, coloring agent, an alkaline substance, agricultural chemicals, etc. (page 3, [0026]-[0027]). All of the above compounds can be considered as chemicals.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi'096 and Hirata et al. as applied to claims 3, 9, 10 and 17 above and further in view of Nishiguchi et al. (JP 10-060207).

With regard to the limitations of claim 7, the combined teaching of Nishiguchi'096 and Hirata discloses that further the components can be mixed with fine particles (JP'096, page 3, [0022]), but it does not disclose that polyvinyl alcohol film further contains inorganic filler (B) having an average particle size of 1 to 10  $\mu\text{m}$ .

Nishiguchi'207 discloses a water-soluble film comprises (A) a modified polyvinyl alcohol and (B) preferably 2-20 wt. % (based on the component A) of fine powder such as clay which has less or equal to 150  $\mu\text{m}$  average particle diameter (abstract). Such class of insoluble or poorly soluble impalpable powder can include clay, kaolin, an aluminum hydroxide, a calcium carbonate, a titanium hydroxide, etc. (page 3, [0025]).

The references are analogous art because they are from the same field of endeavor concerning water-soluble film compositions comprising polyvinyl alcohol and additional ingredients.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate inorganic fine powder having an average particle diameter less or equal to 150  $\mu\text{m}$  as taught by Nishiguchi'207 into the combined Nishiguchi'096 and Hirata's polyvinyl alcohol film composition because all of such impalpable powder prevent the stickiness accompanying moisture absorption and its effect on film physical properties is suppressed (JP'207, page 3, [0026]), and thus to arrive at the subject matter of claim 7.

Thus, the combination of Nishiguchi's and Hirata's references renders all instant claims *prima facie* obvious in view of absent of unexpected results commensurate in scope of claims.

### ***Response to Arguments***

8. Applicants traverse the above-mentioned rejections under 35 U.S.C. § 103(a) of claims 3, 7, 9, 10 and 17 over Nishiguchi's and Hirata's references. Applicant's arguments have been fully considered but they are not persuasive.

9. It appears that the focal Applicants argument resides in the contention that Nishiguchi does not specifically teach that the degree of hydrolysis (i.e. saponification) should be different for the first PVA resin (component A) and the second PVA resin (component B), and the difference in degree of hydrolysis (saponification) between the component A and the component B should be at least 3% by mole (page 5, the last paragraph).

10. It is noted that Nishiguchi discloses the blend of denaturation PVA, which has an anionic radical, and PVA, which has the saponification degree of the specific range at a fixed rate (page 1, [0009]). Nishiguchi does not disclose specifically that difference in degree of hydrolysis (saponification) between the component A and the component B should be at least 3% by mole, but he exemplifies (example 1) a film formed from a composition comprising a mixture of 35 parts of a modified PVA having saponification degree of 96.3%, and 65 parts of a modified PVA having saponification degree of 71.1%, where the difference in degree of hydrolysis between the first PVA and the second PVA is much more than 3%, which is clearly within the claimed range.

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a polarizing film of Hirata has very low water solubility while a polyvinyl alcohol film of Nishiguchi is excellent in low temperature water solubility, and that the polyvinyl alcohol film of Hirata is composed of only one kind of polyvinyl alcohol resin, page 6, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

12. In response to applicant's argument that Hirata's reference is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir.



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1992). In this case, Nishiguchi's and Hirata's references are analogous art because they are from the same field of endeavor concerning water-soluble film comprises a polyvinyl alcohol and a plasticizer. It is noted that Hirata's reference was used only to show the equivalency of glycerol, diglycerol or ethylene glycol used by Hishiguchi and trimethylolpropane as a plasticizer for a polyvinyl alcohol resin, which does not concern the number of used polyvinyl alcohol resin, their saponification degree, etc.

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Michael M. Bernshteyn/  
Examiner, Art Unit 1796

/M. M. B./

Examiner, Art Unit 1796

/Randy Gulakowski/

Supervisory Patent Examiner, Art Unit 1796

